

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

What is claimed is:

1. (Currently Amended) A method for estimating a signal to interference ratio (SIR) of a signal transmitted from a first unit ~~and~~ to a remotely located second unit in a Wideband Code Division Multiple Access (WCDMA) wireless communication system, said signal being transmitted through an air interface and comprising pilot and data symbols, ~~characterised by the steps of the method comprising~~

verifying ~~(5-40)~~ a transmitted Transmit Power Control (TPC) command, by and determining if said TPC command has been correctly received, and
weighting said pilot and data symbols; and

giving a SIR estimation ~~(5-50)~~ depending on the result of said TPC verification ~~(5-40)~~.

2. (Currently Amended) ~~[[A]]~~ The method according to claim 1, ~~further characterised in that said TPC verification step comprises the step of weighing said pilot and data symbols, wherein said weighting comprises taking into account a power change in said data symbols due to a prior TPC change.~~

3. The method according to claim 1, ~~further characterised by comprising~~
encoding said data symbols using space-time transit diversity (STTD).

4. (Currently Amended) [[A]] The method according to claim 1, ~~further~~
~~characterised in that~~ wherein interference is estimated from said pilot symbols.

5. (Currently Amended) [[A]] The method according to claim 4, ~~further~~
~~characterised in that~~ the estimated interference is filtered.

6. (Currently Amended) [[A]] The method according to claim 1, characterised
~~in that~~ wherein the first unit is a base station and the second unit is a mobile unit.

7. (Currently Amended) [[A]] The method according to claim 1, characterised
~~in that~~ wherein the first unit is a mobile unit and the second unit is a base station.

8. (Currently Amended) A device [[[100)]] for estimating a signal to
interference ratio (SIR) of a signal transmitted from a first unit and to a remotely located
second unit in a Wideband Code Division Multiple Access (WCDMA) wireless
communication system, said signal being transmitted through an air interface,
~~characterised in that~~ wherein said device comprises

a means for Transmit Power Control (TPC) verification [[[40)]] having an output
signal, wherein said TPC verification means is arranged to weigh[[t]] said pilot and data
symbols and comprises means for determining if said TPC command have been
correctly received; and

a means for SIR estimation, ~~[[[50]]]~~ and that using said output signal as input signal and being arranged to estimate the SIR estimation depending ~~[[s]]~~ on said output of said TPC verification unit.

9. (Currently Amended) ~~[[A]]~~ The device ~~[[[100]]]~~ according to claim 8, further characterised in that wherein said TPC verification unit weighs said pilot and data symbols.

10. (Currently Amended) ~~[[A]]~~ The device ~~[[[100]]]~~ according to claim 8, further characterised in that wherein said data symbols are encoded using space-time transmit diversity (STTD).

11. (Currently Amended) ~~[[A]]~~ The device ~~[[[100]]]~~ according to claim 8, characterised by further comprising a means for estimating interference from said pilot symbols.

12. (Currently Amended) ~~[[A]]~~ The device ~~[[[100]]]~~ according to claim 11, characterised by further comprising a filter for filtering said estimated interference.

13. (Currently Amended) ~~[[A]]~~ The device ~~[[[100]]]~~ according to claim 8, further characterised in that wherein the first unit is a base station and the second unit is a mobile unit.

14. (Currently Amended) ~~[[A]] The device [[[100]]] according to claim 8, further characterised in that~~ wherein the first unit is a mobile unit and the second unit is a base station.

15. (Currently Amended) A computer readable medium having a plurality of computer-executable instructions for performing the method according to claim 1, ~~characterised by~~ comprising:

a program module for TPC verification giving instructions to a computer, and
 a program module for SIR estimation giving instructions to a computer, depending on the Transmit Power Control (TPC) verification .

16. (New) The method according to claim 1, wherein said giving a SIR estimation depending on the result of said TPC verification comprises
 if said TPC command has been correctly received, the estimated SIR at time n is given as

$$SIR_{est}^{(n)} = \frac{w_3 P_3^{(n-1)} \cdot 10^{0.1\Delta_{TPC}} + w_1 P_1^{(n)} \cdot 10^{0.1\Delta_{rel}} + w_2 P_2^{(n)}}{N^{(n)}} - 1$$

and if said TPC command has not been correctly received, the estimated SIR at time n is given as

$$SIR_{est}^{(n)} = \frac{w_3 P_3^{(n-1)} \cdot 10^{-0.1\Delta_{TPC}} + w_1 P_1^{(n)} \cdot 10^{0.1\Delta_{rel}} + w_2 P_2^{(n)}}{N^{(n)}} - 1 \quad ; \text{ where}$$

$$w_i \geq 0, \text{ for } i = 1, \dots, 3, P_i^{(n)}$$

is the average received power for the symbol or a subset of symbols in interval $I_i^{(n)}$, $N^{(n)}$ is the estimated interference at time n , Δ_{TPC} is a change of power in dB, resulting from a prior TPC command, and Δ_{rel} is a relative power discrepancy between pilot and data symbols in dB.